



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/991,043
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Applicant: William Lo
Group Art Unit: 2142
Examiner: Douglas B. Blair
Title: APPARATUS AND METHOD FOR AUTOMATIC SPEED
DOWNSHIFT FOR A TWO PAIR CABLE
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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicants request a Pre-Appeal Brief Conference and submit that Agazzi (U.S. Patent No. 6,898,185) fails to show, teach, or suggest one or more elements of the presently pending claims.

STATUS OF CLAIMS

Claims 1, 2, 7, 8, 11-24, 34-59, 64, 65, 68-84, 89-109, 114, 115, 132, 133, 138, 139, and 142-155 are rejected under 35 U.S.C. § 102(e) as being unpatentable over Agazzi et al. (U.S. Pat. No. 6,898,185). Claims 3-6, 9-10, 25-33, 60-63, 66-67, 85-88, 110-113, 116-131, 134-137, 140-141, and 156-182 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Agazzi et al. (U.S. Pat. No. 6,898,185) in view of Trans (U.S. Pat. No. 6,377,640).

SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 recites a physical layer of a device connected to a cable of an Ethernet network. The physical layer includes a digital signal processor (DSP) and an autonegotiation controller that communicates with the DSP. The DSP is coupled to the cable, receives and decodes signals on the cable, and codes and transmits signals on the cable. The autonegotiation controller includes a cable detector. The cable detector determines a first number of pairs of twisted pair wires of the cable that are operable. In other words, **the autonegotiation controller includes the cable detector** that determines a first number of pairs of twisted pair wires of said cable that are operable. Independent claims 25, 34, 58, 82, 107, 132, 156, 165, and 174 recite similar limitations.

ARGUMENT

With respect to claim 1, Agazzi fails to show, teach, or suggest an **autonegotiation controller** that communicates with said DSP **and that includes a cable detector** that determines a first number of pairs of twisted pair wires of said cable that are operable.

For anticipation to be present under 35 U.S.C §102(b), there must be no difference between the claimed invention and the reference disclosure as viewed by one skilled in the field of the invention. *Scripps Clinic & Res. Found. V. Genentech, Inc.*, 18 USPQ.2d 1001 (Fed. Cir. 1991). All of the limitations of the claim must be inherent or expressly disclosed and must be arranged as in the claim. *Constant v. Advanced Micro-Devices, Inc.*, 7 USPQ.2d 1057 (Fed. Cir. 1988). Here, Agazzi fails to disclose the limitation of **an autonegotiation controller that includes a cable detector** that determines a first number of pairs of twisted pair wires of said cable that are operable.

As shown in an exemplary embodiment in FIG. 4 of the present application, an autonegotiation controller 52 includes a cable detector 60. The cable detector 60 determines the number of operable pairs of twisted pair wires provided by a cable 20. In other words, the autonegotiation controller 52 itself includes the cable detector 60

that determines the number of operable pairs of twisted pair wires. (See Paragraphs [0028]-[0029] of the present application).

Agazzi fails to explicitly or implicitly disclose this limitation. For example, the Examiner alleges that Agazzi discloses this limitation at Column 19, Lines 25-39 and Column 20, Lines 12-28. Applicant respectfully notes that neither of these cited portions discloses an autonegotiation controller that includes a cable detector.

For example, the first cited portion of Agazzi states:

The diagnostic report function computes the return loss at step 2950. The return loss is calculated in the same fashion as the cable loss in step 2940. However, the coefficients of echo canceller 232 (FIG. 11) are used. The return loss is reported as a function of frequency and margins versus IEEE limits. The cable length may also be estimated using the reflection from the far-end of the cable, which typically exists as a result of mismatches between the termination impedance and the characteristic impedance of the cable. The delay of this reflection is divided by twice the delay per unit length of the UTP-5 cable, to obtain an independent estimate of the cable length. When the cable is broken at some intermediate point, this function returns as estimate of cable length the distance between the transceiver and the point where the cable is cut.

Applicant notes that the above cited portion is absent of any teaching or suggestion that an autonegotiation controller includes a cable detector and instead is generally directed to estimating cable length. Here again, Applicant's claim 1 recites that the autonegotiation controller, specifically, includes the cable detector.

The second cited portion of Agazzi states:

A flowchart for an exemplary broken pair determination function is shown in FIG. 20. The broken pair determination function queries local transceiver 102 (FIG. 10) and receives transmission energy level detection signals for each of the four twisted pairs within the transmission cable. The broken pair determination function then scans the returned values to see if there is a twisted pair for which no energy is detected at step 3210. The broken pair determination function then determines the distance to the break at step 3220 if there is a pair for which there is no transmission energy. The break distance is estimated using the same technique as in step 2940 (FIG. 17) for calculating cable length; however, the detected reflected signal is because of the break in the line and not because of impedance mismatches caused by normal line termination. The broken pair determination function displays the estimated break distance at step 3230 as well as the broken pair identification.

Here again, the above cited portion appears to be absent of any teaching or suggestion that an autonegotiation controller, specifically, includes a cable detector and instead is generally directed to broken pair determination.

Applicant presented the above arguments during a personal interview conducted on February 15, 2007. In response, the Examiner initially contended that this structure would be obvious "based on the lack of details on how such a limitation is implemented as provided by the applicant's specification." (See Continuation Sheet of the Interview Summary of February 15, 2007). In response, Applicant noted that Agazzi does not expressly or inherently disclose an autonegotiation controller that includes a cable detector as Applicant's claim 1 recites, and that therefore the rejection of the claims under § 102(b) is improper. (See Page 3 of the Response filed March 13, 2007).

The Examiner now contends that Agazzi anticipates the claimed invention because "the applicant never defines the autonegotiation controller in the applicant's specification...nor does the applicant provide any evidence of how the autonegotiation controller is to be interpreted." (See Page 3, Lines 4-8 of the FINAL Office Action mailed June 14, 2007). Applicant respectfully disagrees. As described above with respect to Paragraphs [0028] and [0029] of the present application, and as clearly shown in FIG. 4, **the autonegotiation controller 52 includes the cable detector 60.** This structure is explicitly recited in Applicant's claims.

In contrast, the Examiner alleges that a PHY control module 1302 of Agazzi "features the autonegotiation module...and the PHY control module performs the claimed diagnostics." (See Page 3, Lines 8-14 of the FINAL Office Action). Applicant respectfully disagrees because the PHY control module 1302, which the Examiner alleges "features the autonegotiation module," **is not an autonegotiation controller.** Applicant respectfully notes that FIG. 13 of Agazzi clearly discloses a separate autonegotiation module 1310. As such, the Examiner's position that the PHY control module 1302 is **an autonegotiation controller** that includes a cable detector is improper.


Applicant further notes that the Examiner's position that the PHY control module 1302 "performs the claimed diagnostics" is unsupported. The Examiner relies on Column 17, Lines 17-33 of Agazzi, which state that the PHY control module 1302 may

be "placed in diagnostics mode." This cited portion fails to disclose that PHY control module 1302, specifically, includes a cable detector. Instead, the Examiner relies on Column 19, Lines 25-39, and Column 20, Lines 12-28 of Agazzi (recited above on Pages 3 and 4 of the present document) to disclose alleged cable detection. Applicant respectfully notes that neither these nor any other cited portions of Agazzi disclose that the PHY control module 1302 specifically includes the cable detector that performs these functions as claim 1 recites.

Applicant respectfully submits that Agazzi fails to show, teach, or suggest an autonegotiation controller that includes a cable detector that determines a first number of pairs of twisted pair wires of said cable that are operable. The alleged PHY control module of Agazzi is not an autonegotiation controller, and does not include a cable detector. As such, Applicant respectfully submits that the presently pending claims should be allowed.

Respectfully submitted,

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